

a catalyst. The feed material for synthetic linear alpha olefins is typically purified ethylene. Vegetable esters are synthesized from the acid-catalyzed esterification of vegetable fatty acids with various alcohols. EPA listed these two branches of synthetic fluid base materials to provide examples, and EPA does not mean to exclude other synthetic materials that are either in current use or may be used in the future. A synthetic-based drilling fluid may include a combination of synthetic materials.

(ll) *Well completion fluids* means salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production.

(mm) *Well treatment fluids* means any fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled.

(nn) *Workover fluids* means salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair or abandonment procedures.

(oo) *4-day LC₅*, as applied to the sediment toxicity BAT effluent limitations and NSPS means the concentration (milligrams/kilogram dry sediment) of the drilling fluid in sediment that is lethal to 50 percent of the *Leptocheirus plumulosus* test organisms exposed to that concentration of the drilling fluids after four days of constant exposure.

(pp) *10-day LC₅*, as applied to the sediment toxicity BAT effluent limitations and NSPS means the concentration (milligrams/kilogram dry sediment) of the base fluid in sediment that is lethal to 50 percent of the *Leptocheirus plumulosus* test organisms exposed to that concentration of the base fluids after ten days of constant exposure.

(qq) *96-hour LC₅*, means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

(rr) *C₁₆–C₁₈ internal olefin* means a 65/35 blend, proportioned by mass, of hexadecene and octadecene, respec-

tively. Hexadecene is an unsaturated hydrocarbon with a carbon chain length of 16, an internal double carbon bond, and is represented by the Chemical Abstracts Service (CAS) No. 26952-14-7. Octadecene is an unsaturated hydrocarbon with a carbon chain length of 18, an internal double carbon bond, and is represented by the Chemical Abstracts Service (CAS) No. 27070-58-2. (Properties available from the Chemical Abstracts Service, 2540 Olentangy River Road, PO Box 3012, Columbus, OH, 43210).

(ss) *C₁₆–C₁₈ internal olefin drilling fluid* means a *C₁₆–C₁₈* internal olefin drilling fluid formulated as specified in Appendix 8 of subpart A of this part.

(tt) *C₁₂–C₁₄ ester* and *C₈ ester* means the fatty acid/2-ethylhexyl esters with carbon chain lengths ranging from 8 to 16 and represented by the Chemical Abstracts Service (CAS) No. 135800-37-2. (Properties available from the Chemical Abstracts Service, 2540 Olentangy River Road, PO Box 3012, Columbus, OH, 43210)

[61 FR 66124, Dec. 16, 1996, as amended at 66 FR 6895, Jan. 22, 2001; 69 FR 18803, Apr. 9, 2004]

§ 435.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30–32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS—OIL AND GREASE

[In milligrams per liter]

Pollutant parameter waste source	Maximum for any 1 day	Average of values for 30 consecutive days shall not exceed	Residual chlorine minimum for any 1 day
Produced water	72	48	NA
Deck drainage	(1)	(1)	NA
Water-based:			
Drilling fluids	(1)	(1)	NA
Drill Cuttings	(1)	(1)	NA

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BPT EFFLUENT LIMITATIONS—OIL AND GREASE—Continued

[In milligrams per liter]

Pollutant parameter waste source	Maximum for any 1 day	Average of values for 30 consecutive days shall not exceed	Residual chlorine minimum for any 1 day
Non-aqueous: Drilling fluids	No discharge	No discharge	NA
Drill Cuttings	(¹)	(¹)	NA
Well treatment fluids	(¹)	(¹)	NA
Sanitary: M10	NA	NA	≥ 1
M9IM ³	NA	NA	NA
Domestic	NA	NA	NA

¹ No discharge of free oil.

² Minimum of 1 mg/l and maintained as close to this concentration as possible.

³ There shall be no floating solids as a result of the discharge of these wastes.

[58 FR 12504, Apr. 13, 1979, as amended at 66 FR 6897, Jan. 22, 2001]

§ 435.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30–32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

BAT EFFLUENT LIMITATIONS

Waste source	Pollutant parameter	BAT effluent limitation
Produced water	Oil & grease	The maximum for any one day shall not exceed 42 mg/l; the average of daily values for 30 consecutive days shall not exceed 29 mg/l.
Drilling fluids and drill cuttings: (A) For facilities located within 3 miles from shore. (B) For facilities located beyond 3 miles from shore..	No discharge. ¹

BAT EFFLUENT LIMITATIONS—Continued

Waste source	Pollutant parameter	BAT effluent limitation
Water-based drilling fluids and associated drill cuttings.	SPP Toxicity	Minimum 96-hour LC ₅₀ of the SPP Toxicity Test ² shall be 3% by volume.
	Free oil	No discharge. ³
	Diesel oil	No discharge.
	Mercury	1 mg/kg dry weight maximum in the stock barite.
	Cadmium	3 mg/kg dry weight maximum in the stock barite.
	No discharge.
Non-aqueous drilling fluids (NAFs).		
Drill cuttings associated with non-aqueous drilling fluids:		
Stock Limitations (C ₁₆ –C ₁₈ internal olefin).	Mercury	1 mg/kg dry weight maximum in the stock barite.
	Cadmium	3 mg/kg dry weight maximum in the stock barite.
	Polynuclear Aromatic Hydrocarbons (PAH).	PAH mass ratio ⁵ shall not exceed 1×10 ^{–5} .
	Sediment toxicity.	Base fluid sediment toxicity ratio ⁶ shall not exceed 1.0.
	Biodegradation rate.	Biodegradation rate ratio ⁷ shall not exceed 1.0.
Discharge Limitations.	Diesel oil	No discharge.
	SPP Toxicity	Minimum 96-hour LC ₅₀ of the SPP Toxicity Test ² shall be 3% by volume.
	Sediment toxicity.	Drilling fluid sediment toxicity ratio ⁸ shall not exceed 1.0.
	Formation Oil	No discharge. ⁹